INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

PART 70 MINOR SOURCE MODIFICATION
OFFICE OF AIR QUALITY
and
City of Gary Division of Air Pollution Control

Koppers Industries, Inc.
U.S. Steel - Gary Works
One North Broadway
Gary, Indiana 46402

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Source Modification No.: 089-12187-00180	
Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: April 19, 2002

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SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a coal tar centrifuge plant as an onsite contractor for U.S. Steel - Gary Works

Responsible Official:	Mr. Michael J. Mancione
Source Address:	One North Broadway, Gary, Indiana 46402
Mailing Address:	3900 South Laramie Avenue, Cicero, Illinois 60804
General Source Phone Number:	(708)222-4660
SIC Code:	2863
County Location:	Lake
Source Location Status:	Nonattainment for Ozone, PM_{10}, SOx (City of Gary) Attainment for all other criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD and Emission Offset Rules; Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

A coal tar centrifuge plant consisting of the following equipment:

(a) a diluent feed tank (ID# T-001), two (2) diluent pumps (ID#s P-003 and P-004), and associated piping that introduces diluent into the crude tar stream upstream of the heat exchanger in order to decrease the viscosity of the crude tar prior to centrifuging;

(b) a steam heated heat exchanger (ID# E-001) to heat the crude tar/diluent mixture to a temperature of approximately 250 ^{o}F in order to decrease the viscosity of the crude tar prior to centrifuging

(c) a tar centrifuge (ID# S-001) to remove solids entrained in the crude tar thus converting the crude tar to clarified tar;

(d) a clarified tar transfer tank (ID# T-002), two (2) clarified tar transfer pumps (ID#s P-005 and P-006), and associated piping that receive clarified tar from the centrifuge and transfer it to two (2) existing gas-blanketed tanks (ID#s T-363A and T-363D) that are leased to Koppers Industries by U.S. Steel – Gary Works (Only tank #T-363D is leased to Koppers Industries with the option to use tank #T-363A in the event that tank #T-363D is in need of repair, preventing its use. The monitoring, maintenance, repair, record keeping and reporting of these two leased tanks remains the responsibility of U.S. Steel – Gary Works);

(e) a product tar solids screw conveyor (ID# C-001) and associated transfer chutes that receive product tar solids removed from the tar in the centrifuge and transfer the product tar solids to roll-off boxes for transport to USS's by-products recovery plant residual materials recycling facility; and

(f) a process local exhaust ventilation system that captures and controls vapors emitted from the solids conveyor, chutes from the conveyor to solids roll-off boxes, and the clarified tar transfer tank. This system consists of a vent gas blower (ID# BL-001) and associated ductwork that exhaust captured vapors to a 3.0 MMBtu/hr natural gas fired high-efficiency, temperature controlled flare incinerator (ID# H-001) for incineration of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs).

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 Local Agency Requirement

An application for an operation permit must be made ninety (90) days before start up to:

Gary Local Agency
Division of Air Pollution Control
504 Broadway, Suite 1012
Gary, Indiana 46402

The operation permit issued by Gary Local Agency shall contain as a minimum the conditions in the Operation Conditions section of this permit.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(a) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Fugitive Dust Emissions [326 IAC 6-1-11.1]

Pursuant to 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements), the particulate matter emissions from source wide activities shall meet the following requirements:

(a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).

(b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road

shall not exceed ten percent (10%).

(c) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).

(d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.

(e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.

(f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.

(g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).

(h) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.

(i) The PM_{10} emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(j) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).

(k) Any facility or operation not specified in 326 IAC 6-1-11.1(d) shall meet a twenty percent (20%), three (3) minute average opacity standard.

C.7 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015

Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.11 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. The compliance monitoring plan can be either an entirely new document, consist in whole of information contained in other documents, or consist of a combination of new information and information contained in other documents. If the compliance monitoring plan incorporates by reference information contained in other documents, the Permittee shall identify as part of the compliance monitoring plan the documents in which the information is found. The elements of the compliance monitoring plan are:

(1) This condition;

(2) The Compliance Determination Requirements in Section D of this permit;

(3) The Compliance Monitoring Requirements in Section D of this permit;

(4) The Record Keeping and Reporting Requirements in Section C (General Record Keeping Requirements, and General Reporting Requirements) and in Section D

of this permit; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:

(A) Reasonable response steps that may be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and

(B) A time schedule for taking reasonable response steps including a schedule for devising additional response steps for situations that may not have been predicted.

(b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to take reasonable response steps may constitute a violation of the permit.

(c) Upon investigation of a compliance monitoring excursion, the Permittee is excused from taking further response steps for any of the following reasons:

(1) A false reading occurs due to the malfunction of the monitoring equipment. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied.

(3) An automatic measurement was taken when the process was not operating.

(4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.

(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

(e) All monitoring required in Section D shall be performed at all times the equipment is operating. If monitoring is required by Section D and the equipment is not operating, then the Permittee may record the fact that the equipment is not operating or perform the required monitoring.

(f) At its discretion, IDEM may excuse the Permittee's failure to perform the monitoring and record keeping as required by Section D, if the Permittee provides adequate justification and documents that such failures do not exceed five percent (5%) of the operating time in any quarter. Temporary, unscheduled unavailability of qualified staff shall be considered a valid reason for failure to perform the monitoring or record keeping requirements in

Section D.

C.12 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-7-16.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value.

Any operation shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ

may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.14 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

(a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.15 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

(a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

A coal tar centrifuge plant consisting of the following equipment:

(a) a diluent feed tank (ID# T-001), two (2) diluent pumps (ID#s P-003 and P-004), and associated piping that introduces diluent into the crude tar stream upstream of the heat exchanger in order to decrease the viscosity of the crude tar prior to centrifuging;

(b) a steam heated heat exchanger (ID# E-001) to heat the crude tar/diluent mixture to a temperature of approximately 250 ^{o}F in order to decrease the viscosity of the crude tar prior to centrifuging

(c) a tar centrifuge (ID# S-001) to remove solids entrained in the crude tar thus converting the crude tar to clarified tar;

(d) a clarified tar transfer tank (ID# T-002), two (2) clarified tar transfer pumps (ID#s P-005 and P-006), and associated piping that receive clarified tar from the centrifuge and transfer it to two (2) existing gas-blanketed tanks (ID#s T-363A and T-363D) that are leased to Koppers Industries by U.S. Steel – Gary Works (Only tank #T-363D is leased to Koppers Industries with the option to use tank #T-363A in the event that tank #T-363D is in need of repair, preventing its use. The monitoring, maintenance, repair, record keeping and reporting of these two leased tanks remains the responsibility of U.S. Steel – Gary Works);

(e) a product tar solids screw conveyor (ID# C-001) and associated transfer chutes that receive product tar solids removed from the tar in the centrifuge and transfer the product tar solids to roll-off boxes for transport to USS's by-products recovery plant residual materials recycling facility; and

(f) a process local exhaust ventilation system that captures and controls vapors emitted from the solids conveyor, chutes from the conveyor to solids roll-off boxes, and the clarified tar transfer tank. This system consists of a vent gas blower (ID# BL-001) and associated ductwork that exhaust captured vapors to a 3.0 MMBtu/hr natural gas fired high-efficiency, temperature controlled flare incinerator (ID# H-001) for incineration of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 Particulate Matter (PM) [326 IAC 6-1-2]

Pursuant to 326 IAC 6-1-2(a) (Nonattainment Area Particulate Limitations), particulate matter (PM) emissions from all noncombustion facilities shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).

D.1.2 Volatile Organic Compounds (VOC) [326 IAC 2-3]

Emissions of volatile organic compounds (VOC) from the coal tar centrifuge plant shall be less than twenty five (25) tons per 12 consecutive month period. Compliance with this limit makes the requirements of 326 IAC 2-3 (Emission Offset) not applicable.

D.1.3 General Provisions Relating to NESHAP [326 IAC 20-1-1][40 CFR Part 61, Subpart A]

The provisions of 40 CFR Part 61, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1-1, apply to the new clarified tar storage tank (ID# T-002) except when otherwise specified in 40 CFR Part 61, Subpart L.

D.1.4 National Emission Standard for Hazardous Air Pollutants for Benzene Emissions from Coke By-Product Recovery Plants [40 CFR 61, Subpart L]

Pursuant to 40 CFR 61, Subpart L, the new clarified tar storage tank (ID# T-002) shall comply with the following requirements:

(a) Each owner or operator of a furnace or a foundry coke byproduct recovery plant shall enclose and seal all openings on each process vessel, tar storage tank, and tar-intercepting sump.

(b) The owner or operator shall duct gases from each process vessel, tar storage tank, and tar-intercepting sump to the gas collection system, gas distribution system, or other enclosed point in the by-product recovery process where the benzene in the gas will be recovered or destroyed. This system can be designed as a closed, positive pressure, gas blanketing system.

D.1.5 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for this coal tar centrifuge plant.

Compliance Determination Requirements

D.1.6 Flare Incinerator [326 IAC 2-3]

A process local exhaust ventilation system that captures and controls vapors emitted from the solids conveyor, chutes from the conveyor to solids roll-off boxes, and the clarified tar transfer tank (T-002) shall be operated at all times the coal tar centrifuge plant is in operation to comply with 40 CFR 61 Subpart L and such that 326 IAC 2-3 does not apply. This system consists of a vent gas blower (ID# BL-001) and associated ductwork that exhaust captured vapors to a 3.0 MMBtu/hr natural gas fired high-efficiency, temperature controlled flare incinerator (ID# H-001) for incineration of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs).

D.1.7 Testing Requirements [326 IAC 2-1.1-11] [40 CFR 61.13] [40 CFR 61.137]

(a) The owner or operator shall test emissions from the source in accordance with the requirements of 40 CFR 61.13.

(b) Each owner or operator subject to the provisions of 40 CFR 61 Subpart L shall comply with the test methods and procedure requirements in 61.245 of 40 CFR 61 Subpart V.

(c) Pursuant to 40 CFR 61.13, the owner or operator shall notify IDEM, OAQ of the emission test at least 30 days before the emission test to allow IDEM, OAQ the opportunity to have an observer present during the test.

Compliance Monitoring Requirements

D.1.8 Monitoring Requirements [40 CFR 61.132(b)] [40 CFR 61.132(c)]

The owner or operator of the new clarified tar storage tank (ID# T-002) shall comply with the following requirements:

(a) The owner or operator shall monitor the connections and seals on each control system to determine if it is operating with no detectable emissions, using Method 21 (40 CFR Part 60, Appendix A) and procedures specified in Sec. 61.245(c), and shall visually inspect each source (including sealing materials) and the ductwork of the control system for evidence of visible defects such as gaps or tears. This monitoring and inspection shall be conducted on a semiannual basis and at any other time after the control system is repressurized with blanketing gas following removal of the cover or opening of the access hatch.

(1) If an instrument reading indicates an organic chemical concentration more than 500 ppm above a background concentration, as measured by Method 21, a leak is detected.

(2) If visible defects such as gaps in sealing materials are observed during a visual inspection, a leak is detected.

(3) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected.

(4) A first attempt at repair of any leak or visible defect shall be made no later than 5 calendar days after each leak is detected

(b) The owner or operator shall conduct a maintenance inspection of the control system on an annual basis for evidence of system abnormalities, such as blocked or plugged lines, sticking valves, plugged condensate traps, and other maintenance defects that could result in abnormal system operation. The owner or operator shall make a first attempt at repair within 5 days, with repair within 15 days of detection.

Record Keeping and Reporting Requirements

D.1.9 Record Keeping Requirements [40 CFR 61.138]

To document compliance with Condition D.1.5, the Permittee shall maintain the following records pursuant to 40 CFR 61.138:

(a) The following information pertaining to the design of control equipment installed for the tar storage tanks shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(b) The following information shall be recorded and maintained for 2 years following each semiannual (and other) inspection and each annual maintenance inspection:

(1) The date of the inspection and the name of the inspector.

(2) A brief description of each visible defect in the source or control equipment and the method and date of repair of the defect.

(3) The presence of a leak, as measured using the method described in Sec. 61.245(c). The record shall include the date of attempted and actual repair and method of repair of the leak.

(4) A brief description of any system abnormalities found during the annual maintenance inspection, the repairs made, the date of attempted repair, and the date of actual repair.

D.1.10 Reporting Requirements [40 CFR 61.138]

To document compliance with Condition D.1.9, the Permittee shall make the following reports pursuant to 40 CFR 61.138:

(a) An owner or operator of any source to which this subpart applies shall submit a statement in writing notifying the Administrator that the requirements of this subpart and 40 CFR 61, Subpart V, have been implemented.

(b) In the case of an existing source or a new source that has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted under Sec. 61.11, along with the information required under Sec. 61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the Administrator.

(c) In the case of a new source that did not have an initial startup date preceding the effective date, the statement shall be submitted with the application for approval of construction, as described under Sec. 61.07.

(d) The statement is to contain the following information for each source:

(1) Type of source (e.g., a light-oil sump or pump).

(2) For equipment in benzene service, equipment identification number and process unit identification: percent by weight benzene in the fluid at the equipment; and process fluid state in the equipment (gas/vapor or liquid).

(3) Method of compliance with the standard (e.g., ``gas blanketing,'' ``monthly leak detection and repair,'' or ``equipped with dual mechanical seals''). This includes whether the plant plans to be a furnace or foundry coke by-product recovery plant for the purposes of Sec. 61.132(d).

(e) A report shall be submitted to the Administrator semiannually starting 6 months after the initial reports required in Sec. 61.138(e) and Sec. 61.10, which includes the following information:

(1) A brief description of any visible defect in the source or ductwork,

(2) The number of leaks detected and repaired, and

(3) A brief description of any system abnormalities found during each annual maintenance inspection that occurred in the reporting period and the repairs made.

(4) A statement signed by the owner or operator stating whether all provisions of 40 CFR Part 61, Subpart L, have been fulfilled during the semiannual reporting period.

(5) Revisions to items reported according to this section if changes have occurred since the initial report or subsequent revisions to the initial report.

(f) In the first report submitted as required in Sec. 61.138(e), the report shall include a reporting schedule stating the months that semiannual reports shall be submitted. Subsequent reports shall be submitted according to that schedule unless a revised schedule has been submitted in a previous semiannual report

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: Koppers Industries, Inc.
Source Address: One North Broadway, Gary Indiana 46402
Mailing Address: 3900 South Laramie Avenue, Cicero, Illinois 60804
Source Modification No.: 089-12187-00180

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

9 Test Result (specify) _____

9 Report (specify) _____

9 Notification (specify) _____

9 Affidavit (specify) _____

9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Koppers Industries, Inc
Source Address: One North Broadway, Gary Indiana 46402
Mailing Address: 3900 South Laramie Avenue, Cicero, Illinois 60804
Source Modification No.: 089-12187-00180
Facility: Coal Tar Centrifuge Plant
Parameter: Volatile Organic Compounds (VOC)
Limit: Less Than Twenty Five (25) Tons Annually

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Indiana Department of Environmental Management
Office of Air Quality
and
City of Gary Division of Air Pollution Control

Technical Support Document (TSD) for a Part 70 Minor Source Modification.

Source Background and Description

Source Name:	Koppers Industries, Inc.
Source Location:	U.S. Steel – Gary Works One North Broadway, Gary, Indiana 46402
County:	Lake
SIC Code:	2865
Operation Permit No.:	T 089-13872-00180
Operation Permit Issuance Date:	Not Yet Issued
Significant Source Modification No.:	089-12187-00180
Permit Reviewer:	M.E. Sims

The Office of Air Quality (OAQ) has reviewed a modification application from Koppers Industries, Inc. relating to the operation of a coal tar centrifuge plant **as part of the existing six-meter coke oven battery tar handling and disposition system at U.S. Steel – Gary Works**. The existing six-meter coke oven tar handling and disposition system has been identified in the application as consisting of a heated 125,000 gallon capacity storage/feed tank, pumps and piping systems. The coal tar is pumped from the storage/feed tank to the blast furnace tuyeres through injection lines and into the blast furnaces as a fuel.

Koppers Industries, Inc. will operate the coal tar centrifuge plant as an on-site contractor to U.S. Steel – Gary Works. The coal tar centrifuge plant includes the following equipment:

(a) a diluent feed tank (ID# T-001), two (2) diluent pumps (ID#s P-003 and P-004), and associated piping that introduces diluent into the crude tar upstream of the heat exchanger in order to decrease the viscosity of the crude tar prior to centrifuging;

(b) a steam heated heat exchanger (ID# E-001) to heat the crude tar/diluent mixture to a temperature of approximately 250 ^{o}F in order to decrease the viscosity of the crude tar prior to centrifuging

(c) a tar centrifuge (ID# S-001) to remove solids entrained in the crude tar thus converting the crude tar to clarified tar;

(d) a clarified tar transfer tank (ID# T-002), two (2) clarified tar transfer pumps (ID#s P-005 and P-006), and associated piping that receive clarified tar from the centrifuge and transfer it to two (2) existing gas-blanketed tanks (ID#s T-363A and T-363D) that are leased to Koppers Industries by U.S. Steel – Gary Works (Only tank #T-363D is leased to Koppers Industries with the option to use tank #T-363A in the event that tank #T-363D is in need of repair, preventing its use. The monitoring, maintenance, repair, record keeping and reporting of these two leased tanks remains the responsibility of U.S. Steel – Gary Works);

(e) a product tar solids screw conveyor (ID# C-001) and associated transfer chutes that receive product tar solids removed from the tar in the centrifuge and transfer the product tar solids to roll-off boxes for transport to U.S. Steel – Gary Works by-products recovery plant residual materials recycling facility; and

(f) a process local exhaust ventilation system that captures and controls vapors emitted from the solids conveyor, chutes from the conveyor to solids roll-off boxes, and the clarified tar transfer tank. This system consists of a vent gas blower (ID# BL-001) and associated ductwork that exhaust captured vapors to a 3.0 MMBtu/hr natural gas fired high-efficiency, temperature controlled flare incinerator (ID# H-001) for incineration of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs).

This new plant will allow U.S. Steel – Gary Works and Koppers Industries, Inc. the flexibility to either clarify the tar at the new tar centrifuge plant (to produce clarified tar and product tar solids) or inject the tar (as is currently being done) at the blast furnace (as a fuel). Additionally, the product tar solids will be blended with the pulverized coal blend and charged into the coke oven batteries to produce metallurgical coke. This blending operation will need to be evaluated for any emission increases at the coke oven batteries and may have some RCRA permitting implications for U.S. Steel – Gary Works as well as affecting the Part 70 application of U.S. Steel – Gary Works contractor Brandenburg Industries (T 089-8013-00176).

There are no available records at U.S. Steel – Gary Works as to when the existing blast furnace tar injection system commenced operations. Unidentified U.S. Steel personnel indicated to Koppers Industries that the system was in operation, handling six-meter battery tar sometime prior to 1978 after the two six-meter coke oven batteries (Nos. 2 and 3 Batteries) commenced operations. There are no local, state or federal construction or operation permits in U.S. Steel – Gary Works records that specifically cover the blast furnace tar injection system. Copies of Certificates of Operation issued by the City of Gary Air Pollution Control Board in February 1994 for Blast Furnace #4, Blast Furnace #6, Blast Furnace #8 and Blast Furnace #13 do not list coal tar as a fuel.

The Blast Furnace Tar Injection System is not specifically mentioned in U.S. Steel – Gary Works Part 70 permit application (T 089-7663-00121). The process flow schematic diagrams for Blast Furnace #4, Blast Furnace #6 and Blast Furnace #8 submitted with the Part 70 application show coal tar as a fuel input however, no input rates are provided. Coal tar is not indicated as a fuel input on the process flow schematic diagram for Blast Furnace #13. None of the Combustion Forms (PI-02) submitted with the Part 70 application, which list the fuels combusted by each furnace, list coal tar as a fuel. **There is nothing in the U.S. Steel – Gary Works Part 70 application identified as the existing six-meter coke oven battery tar handling and disposition system**.

The most recent Annual Air Emission Inventory and Emission Statement Facility Report for US Steel - Gary Works is for the year 2000. In this report, coal tar is not indicated as a fuel for the blast furnaces.

History

On June 30, 1998 Koppers Industries submitted application #089-9910-00180 for a new tar centrifuge plant to be located at the U.S. Steel – Gary Works. This application also called for the shutdown of the blast furnace tar injection system consisting of a 125,000 gallon heated tar/diluent mixture storage and feed tank. Upon further evaluation of the project by Koppers Industries, Inc., it was determined that the project met the requirements of an exemption under House Enrolled Act (HEA) 1265. Koppers Industries, Inc. submitted application #089-10121-00180 on September 24, 1998 as an Exemption Qualification (EQ-02). Application #089-9910-00180 was combined

into application #089-10121-00180. The Exemption Qualification called for the construction of the new tar centrifuge plant and the contemporaneous shutdown of the blast furnace tar injection system. Exemption Qualification EQ 089-10121-00180 was issued on October 27, 1998. The new tar centrifuge plant was constructed in accordance with EQ 089-10121-00180 and IDEM received a notification of scheduled initial operation on July 16, 1999. IDEM was notified of initial operation for shakedown on July 20, 1999 and a letter of actual initial operation was received on July 21, 1999. On August 30, 1999 IDEM received a letter stating that the new tar centrifuge plant would be mothballed. In September 1999 the plant was mothballed. On September 1, 1999 Koppers Industries Inc. submitted Review Request #089-11309-00180 to continue operation of the blast furnace tar injection system due to a drop in market demand for coal tar. Upon meeting with IDEM and realizing that RR #089-11309-00180 would not be an exemption, Koppers Industries, Inc. withdrew RR #089-11309-00180 on or about October 16, 1999. On April 24, 2000, Koppers Industries submitted application # 089-12187-00180 as a Part 70 minor source modification to operate the tar centrifuge plant as part of the existing six-meter coke oven battery tar handling and disposition system. The following table summarizes the status of the various applications submitted for the tar centrifuge plant.

Status of Centrifuge Plant Applications		
Application	**Date Received**	**Status**
9910	06/30/98	combined with #10121
10121	09/24/98	Exemption Qualification EQ-02 issued 10/27/98
11309	09/01/99	withdrawn by Koppers on 10/16/99
12187	04/24/00	pending : submitted as a Part 70 minor source modification

The current status of the tar centrifuge plant is as follows. The tar centrifuge plant was permitted to operate under EQ 089-10121-00180 and the blast furnace tar injection system was required to be shutdown upon operation of the tar centrifuge plant. Koppers Industries has chosen not to operate the tar centrifuge plant. In reviewing the current operating approval for the tar centrifuge plant the OAQ now feels the permitting of the tar centrifuge plant under an EQ-02 exemption qualification was incorrect. The EQ-02 approval (no longer being issued) was for units where the most stringent limitation is a New Source Performance Standard (NSPS) or National Emissions Standard for Hazardous Air Pollutants (NESHAP). All tar centrifuge plant applications submitted to IDEM identify the primary emission points for the tar centrifuge plant as being the solids conveyor, the solids chutes to the roll-off boxes and the clarified tar transfer tank. Information submitted with application #10121 claims the National Emission Standard for Benzene Emissions from Coke By-Products Recovery Plants (Benzene NESHAP 40 CFR 61 Subpart L) as being applicable to the tar centrifuge plant because 1) upon installation and startup the centrifuge plant will become part of the Coke By-products Recovery Plant at USS's Gary Coke Operations and 2) one new tank (clarified tar storage tank T-002) and two existing tanks (clarified tar storage tanks T-363A, T-363D) are defined as tar storage tanks under 40 CFR 61.131. Koppers also made claim that all equipment downstream of the diluent feed tanks might operate in VHAP service and therefore 40 CFR 63 Subpart V, National Emission Standard for Equipment Leaks may or may not apply to this equipment. IDEM feels that the claim made by Koppers that the NESHAPs are the most stringent requirement and the only requirement for the proposed tar centrifuge plant is a streach on the applicability of the NESHAPs and is incorrect. Only one new clarified tar storage tank of all the new equipment being installed is applicable to a NESHAP. No other equipment associated with the tar centrifuge plant has any other NSPS or NESHAP applicability.

The primary pollutants associated with the operation of the tar centrifuge plant are volatile organic compounds (VOC) and volatile hazardous air pollutants (VHAPs). The following table list just the uncontrolled and controlled VOC emissions contained in each of the four applications submitted regarding the tar centrifuge plant.

Tar Centrifuge Plant VOC Emissions Per Application (tons/yr)*				
	#9910	#10121	#11309	#12187
Uncontrolled	884.8	309.7	not available	161.8
Controlled	13.21	9.27	not available	4.81

Review Request #11309 was withdrawn by the Koppers Industries after realizing that it would not be processed as an exemption. This review request pertained to the blast furnace tar injection system and therefore did not contain emissions information on the centrifuge plant. It should be noted that the values shown in the table were taken from the applications and do not represent the OAQ's evaluation of the emissions.

For applications #9910 and #10121 the pound per hour emission rate for VOC emissions stated in the application is consistent with the annual calculated emissions (lb/hr X 4.38 = tpy). This is not so for application #12187. The pound per hour rate given in the application equates to annual uncontrolled VOC emissions of 243 tons not the 161.8 tons stated by Koppers Industries. The annual emissions will be discussed later in the TSD. However, the OAQ feels that the level of approval for this application (#12187) should be a significant source modification and be subject to the public participation process for the following reasons:

a) Emissions are calculated based on 8760 hours per year. It appears that Koppers has based emission on the actual operating hours for the tar centrifuge plant.

b) Determination of the permit level is based on the uncontrolled emissions. Koppers took the controlled emissions, performed a future potential minus past actual analysis to come up with the project emissions then compares this number to the permitting thresholds.

c) The Benzene NESHAP 40 CFR 61 Subpart L is not the most stringent requirement for the tar centrifuge plant. IDEM does agree that the NESHAP is the most stringent requirement for the new clarified tar transfer tank (T-002). The existing dehydrated tar tanks (T-304A, T-306A) are already subject to the NESHAP and meet the control requirements through the use of a gas-blanketing system. The other units with significant VOC emissions (the solids conveyor and chutes from the conveyor to the solids roll-off boxes) are not affected sources under the NESHAP. The remainder of the process equipment cannot be considered to be in benzene service because the benzene content of crude tar and clarified tar is less than ten percent (10%) by weight. Thus, neither the Benzene NESHAP 40 CFR 61 Subpart L or 40 CFR 63 Subpart V (National Emission Standard for Equipment Leaks) is applicable to this equipment.

   Koppers Industries could have used a gas-blanketing system to mitigate emissions from the new clarified tar transfer tank (T-002). This type of system is used with all other tar storage tanks located at U.S. Steel – Gary Works that are subject to the Benzene NESHAP 40 CFR 61 Subpart L. The OAQ feels that Koppers Industries chose to mitigate the emissions from the new clarified tar transfer tank (T-002) by installing a 3.0 MMBtu/hr natural gas fired high-efficiency, temperature controlled flare incinerator (ID# H-001) with the intent of venting the other VOC emitting processes to this control device. This control device meets the requirements of 61.139 of Benzene NESHAP 40 CFR 61 Subpart L however the OAQ does not interpret this to mean the permitting level for the tar centrifuge should be based on the controlled emissions.

d) This modification will give Koppers Industries and U.S. Steel – Gary Works the option of using the blast furnace tar injection system or the tar centrifuge plant to process the tar. However, the permitted status of the blast furnace tar injection system is questionable.

US EPA Region 5 Determination

The question of the NESHAP applicability (40 CFR 61 Subpart L) was referred to U.S. EPA Region 5 for their determination. Mr. Edward Wojciechowski, (Region 5 Benzene NESHAP contact) in consultation with EPA Office of Air Quality Planning and Standards (OAQPS) reviewed the NESHAP applicability to the coal tar centrifuge plant and made the following determination.

"The tar entering the centrifuge plant must first be made more fluid, so a diluent, either naphthalene still residue or carbon black oil is added.

Tar Storage Tank
In the definitions in Subpart L, 61.131, "Tar storage tank" is any type of container used to collect or store crude tar... The regulations contemplate that crude tar is what is typically sold to tar processors for refining. Since the tar USS produces must first undergo additional cleaning (fines removal), in order for it to be valuable to a tar processor, it is not at a final stage of "crude tar" until after it is centrifuged. Therefore, the storage tank is subject to the rule. While it may be argued that since the centrifuge, storage tank and connections are all part of the Koppers process, they are all not covered since tar processing facilities in and of themselves were not meant to be covered. What sets this situation out of the norm is that it is an on-site processor, for which precedent has already been set for requiring controls under the rule.

Centrifuge, Solids Conveyor and Roll-off Boxes
With regard to the centrifuge, the definition of "Tar storage tank" is the place to start. This definition includes centrifugal separation as part of the covered processes to reduce the water content. At this point in the process, there is virtually no water in the tar. Reviewing the chemical constituents for the carbon black oil and the naphthalene still residue indicates that no water is present here either. It would not be appropriate then to categorize the centrifuge as a tar storage tank. **So in my interpretation, the centrifuge is not covered**. For the record, it was further explained to me that there are no vents to the atmosphere directly from the centrifuge.

The last piece to this is if the piping carrying the tar and conveyor to the roll-off box could be covered under Subpart V, which is incorporated by reference into Subpart L. These sources could only be covered if the material being transported contains at least 10% by weight benzene (See definition of "In benzene service"). According to information I learned from Mark Cilley of Koppers, both dilutents and the tar all have 1% or less benzene. **Therefore, these sources are not covered by the rule**."

The Koppers Industries used a ChemCAD mathematical simulation model to estimate emissions for the tar centrifuge plant. The values from the ChemCAD model were increased by 15% to provide a conservative estimate and to account for uncertainties. The values with the 15% increase were used by the OAQ to calculate the potential to emit, thereby making the application a significant source modification (uncontrolled VOC emissions were greater than 25 tons per year). Following the Region 5 determination of the NESHAP applicability, Koppers Industries requested that the OAQ determine the potential to emit based on the values without the 15% increase. They then separated the process emissions into those for the storage tank and those for the solids conveyer and roll-off boxes. Using this methodology, the potential to emit VOC is less than 25 tons per year and the application is minor source modification. The OAQ has reviewed these calculations and agrees with the methodology. The application will be processed as a minor source modification.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
SS-1	flare	40	4.0	1500	1500
SS-2	diluent feed tank	14	0.25	variable	70
SS-3	emergency vent	40	0.5	546	250

Recommendation

The staff recommends to the Commissioner that the Part 70 Minor Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application (which included the Part 70 application) and additional information submitted by the applicant. The OAQ also referred to the U.S. Steel Part 70 application and the two (2) previous tar centrifuge plant applications during this review.

An application for the purposes of this review was received on April 25, 2000 with additional information received on December 6, 2001, February 15, 2002 and April 5, 2002.

Emission Calculations

U.S. Steel – Gary Works has no records as to when operation of the blast furnace tar injection system commenced. The OAQ could not find any mention of a blast furnace tar injection system in the Part 70 application submitted by U.S. Steel – Gary Works in December 1996. The OAQ could not find any reports from U.S. Steel - Gary Works indicating injection rates for the coal tar or that coal tar is used as a fuel for the blast furnaces. Questions arise as to whether the coal tar is displacing natural gas or fuel oil (the only two reported fuels) as a fuel for the blast furnaces and how this affects the sulfur content of the blast furnace gas which is combusted throughout U.S. Steel – Gary Works. The OAQ understands that injecting the coal tar into the blast furnaces may be a standard practice but feels that there are permitting issues that have not been addressed as a result of this practice.

In their application, Koppers Industries performed a future potential to past actual analysis on the existing blast furnace tar injection system. The OAQ disagrees with this analysis due to the questionable permitting status of what Koppers calls the blast furnace tar injection system. **Therefore, the OAQ is only permitting the tar centrifuge plant and not the blast furnace tar injection system under this application.** Only the potential to emit of the tar centrifuge plant will be considered in the applicability for this application. The OAQ will seek to determine the permitting implications of the blast furnace tar injection system and the blending of product tar solids with pulverized coal at the coke oven batteries as part of the review of the Part 70 application for U.S. Steel – Gary Works.

See Appendix A of this document for detailed emission calculations. (2 pages)

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	0.096
PM_{10}	0.096
SO_2	0.0074
VOC	22.66
CO	1.069
NO_x	1.27

HAPs	Potential To Emit (tons/year)
napthalene	12.88
POM	4.85
benzene	1.38
TOTAL HAPs	20.16

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Minor Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(d)(4) and 326 IAC 2-7-10.5(d)(6). The potential to emit volatile organic compound (VOC) are less than 25 tons per year, no single HAP exceeds 10 tons per year and combined HAPs are less than 25 tons per year.

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM_{10}	moderate nonattainment
SO_2	primary nonattainment
NO_2	attainment or unclassifiable
Ozone	severe nonattainment
CO	attainment or unclassifiable
Lead	attainment or unclassifiable

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as severe nonattainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) The portion of Lake County in which the source is located has also been classified as nonattainment for sulfur dioxide (SO_2) and particulate matter with aerodynamic diameter less than 10 microns (PM_{10}). Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(c) Lake County has been classified as attainment or unclassifiable for NOx. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2, 40 CFR 52.21.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon actual hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)*
PM	2357
PM-10	2357
SO_2	5677
VOC	1992
CO	88276
NOx	5884

* US Steel – Gary Works

(1) Koppers Industries Inc. is an onsite contractor for US Steel – Gary Works. As such, they are considered to be part of the US Steel – Gary Works existing source. This existing source (US Steel – Gary Works) is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.

(2) These emissions are based upon the Annual Air Emission Inventory and Emission Statement Facility Report for the year 2000 located on the OAQ web page under Data Source for Lake County at http://www.IN.gov/idem/air/data.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls.

	Potential to Emit (tons/year)						
Process/facility	PM	PM_{10}	SO_2	VOC	CO	NO_X	HAPs
tar storage tank	0	0	0	3.82	0	0	3.60
solids conveyor/roll-off boxes	0	0	0	0.327	0	0	0.331
diluent feed tank	0	0	0	0.0044	0	0	0.0079
flare incinerator	0.096	0.096	0.0074	0.070	1.069	1.27	0.025
Total (Modification)	0.096	0.096	0.0074	6.56	1.069	1.27	3.94
PSD/Offset Significant Level	25	15	40	25	100	40	-

(a) This modification to an existing major stationary source is not major because the emissions increase of VOC is less than the Emission Offset Significant Levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Federal Rule Applicability

40 CFR 60 - Standards of Performance for New Stationary Sources
There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.

40 CFR 61 – National Emission Standands for Hazardous Air Pollutants
The new clarified tar storage tank T-002 satisfies the definition of a tar storage tank as defined under 40 CFR 61.131 and is therefore subject to 40 CFR 61 Subpart L – National Emission Standard for Benzene Emissions from Coke By-Product Recovery Plants. Pursuant to 40 CFR 61, Subpart L, the new clarified tar storage tank (ID# T-002) shall comply with the following requirements:

(a) Each owner or operator of a furnace or a foundry coke byproduct recovery plant shall enclose and seal all openings on each process vessel, tar storage tank, and tar-intercepting sump.

(b) The owner or operator shall duct gases from each process vessel, tar storage tank, and tar-intercepting sump to the gas collection system, gas distribution system, or other enclosed point in the by-product recovery process where the benzene in the gas will be recovered or destroyed. This system can be designed as a closed, positive pressure, gas blanketing system.

Compliance Determination Requirements (40 CFR 61.137)
(a) The owner or operator shall test emissions from the source in accordance with the requirements of 40 CFR 61.13.

(b) Each owner or operator subject to the provisions of 40 CFR 61 Subpart L shall comply with the test methods and procedure requirements in 61.245 of 40 CFR 61 Subpart V.

(c) Pursuant to 40 CFR 61.13, the owner or operator shall notify IDEM, OAQ of the emission test at least 30 days before the emission test to allow IDEM, OAQ the opportunity to have an observer present during the test.

Compliance Monitoring Requirements (40 CFR 61.132(b) & (c))
(a) The owner or operator shall monitor the connections and seals on each control system to determine if it is operating with no detectable emissions, using Method 21 (40 CFR Part 60, Appendix A) and procedures specified in Sec. 61.245(c), and shall visually inspect each source (including sealing materials) and the ductwork of the control system for evidence of visible defects such as gaps or tears. This monitoring and inspection shall be conducted on a semiannual basis and at any other time after the control system is repressurized with blanketing gas following removal of the cover or opening of the access hatch.

(1) If an instrument reading indicates an organic chemical concentration more than 500 ppm above a background concentration, as measured by Method 21, a leak is detected.

(2) If visible defects such as gaps in sealing materials are observed during a visual

inspection, a leak is detected.

(3) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected.

(4) A first attempt at repair of any leak or visible defect shall be made no later than 5 calendar days after each leak is detected

(b) The owner or operator shall conduct a maintenance inspection of the control system on an annual basis for evidence of system abnormalities, such as blocked or plugged lines, sticking valves, plugged condensate traps, and other maintenance defects that could result in abnormal system operation. The owner or operator shall make a first attempt at repair within 5 days, with repair within 15 days of detection.

Record Keeping Requirements (40 CFR 61.138)

(a) The following information pertaining to the design of control equipment installed for the tar storage tanks shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(b) The following information shall be recorded and maintained for 2 years following each semiannual (and other) inspection and each annual maintenance inspection:

(1) The date of the inspection and the name of the inspector.

(2) A brief description of each visible defect in the source or control equipment and the method and date of repair of the defect.

(3) The presence of a leak, as measured using the method described in Sec. 61.245(c). The record shall include the date of attempted and actual repair and method of repair of the leak.

(4) A brief description of any system abnormalities found during the annual maintenance inspection, the repairs made, the date of attempted repair, and the date of actual repair.

Reporting Requirements (40 CFR 61.138)

(a) An owner or operator of any source to which this subpart applies shall submit a statement in writing notifying the Administrator that the requirements of this subpart and 40 CFR 61, Subpart V, have been implemented.

(b) In the case of an existing source or a new source that has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted under Sec. 61.11, along with the information required under Sec. 61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the Administrator.

(c) In the case of a new source that did not have an initial startup date preceding the effective date, the statement shall be submitted with the application for approval of construction, as described under Sec. 61.07.

(d) The statement is to contain the following information for each source:

(1) Type of source (e.g., a light-oil sump or pump).

(2) For equipment in benzene service, equipment identification number and process unit identification: percent by weight benzene in the fluid at the equipment; and process fluid state in the equipment (gas/vapor or liquid).

(3) Method of compliance with the standard (e.g., ``gas blanketing,'' ``monthly leak detection and repair,'' or ``equipped with dual mechanical seals''). This includes whether the plant plans to be a furnace or foundry coke by-product recovery plant for the purposes of Sec. 61.132(d).

(e) A report shall be submitted to the Administrator semiannually starting 6 months after the initial reports required in Sec. 61.138(e) and Sec. 61.10, which includes the following information:

(1) A brief description of any visible defect in the source or ductwork,

(2) The number of leaks detected and repaired, and

(3) A brief description of any system abnormalities found during each annual maintenance inspection that occurred in the reporting period and the repairs made.

(4) A statement signed by the owner or operator stating whether all provisions of 40 CFR Part 61, Subpart L, have been fulfilled during the semiannual reporting period.

(5) Revisions to items reported according to this section if changes have occurred since the initial report or subsequent revisions to the initial report.

(f) In the first report submitted as required in Sec. 61.138(e), the report shall include a reporting schedule stating the months that semiannual reports shall be submitted. Subsequent reports shall be submitted according to that schedule unless a revised schedule has been submitted in a previous semiannual report

State Rule Applicability

326 IAC 2-1-3.4 (New Source Toxic Control)

The tar centrifuge plant is not subject to the requirements of 326 IAC 2-1-3.4 (MACT) because no single HAP PTE exceeds 10 tons per year and the combined HAP PTE is less than 25 tons per year.

326 IAC 2-3 (Emission Offset Requirements)

The tar centrifuge plant is not subject to the requirements of 326 IAC 2-3 (Emission Offset) because no nonattainment pollutants exceeds the emission offset threshold levels reported in 326 IAC.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 10 tons/yr of VOC and NOx in Lake County. Pursuant to this rule, the owner/operator of this source must submit an emission statement of the source. The annual statement must be received by April 15 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-1-2 (Nonattainment Area Particulate Limitations)

Particulate matter emissions from all noncombustion facilities shall not exceed 0.03 grains per dry standard cubic foot.

326 IAC 8-1-6 (General provisions relating to VOC rules: general reduction requirements for new facilities)

The tar centrifuge plant is not subject to the requirements of 326 IAC 8-1-6 (State BACT Requirements) because the VOC PTE after controls is less than 25 tons per year.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source=s failure to take the appropriate corrective actions within a specific time period.

Conclusion

The operation of this proposed tar centrifuge plant shall be subject to the conditions of the attached proposed Part 70 Minor Source Modification No. 089-12097-00121. Exemption Qualification 089-10121-00180 shall be superceded upon issuance of this minor source modification.

Indiana Department of Environmental Management
Office of Air Quality
and
City of Gary Division of Air Pollution Control

Appendix A – Emission Calculations
Tar Centrifuge Plant

Source Name:	Koppers Industries, Inc.
Source Location:	U.S. Steel – Gary Works One North Broadway, Gary, Indiana 46402
County:	Lake
SIC Code:	2863
Operation Permit No.:	T 089-13872-00180
Operation Permit Issuance Date:	Not Yet Issued
Significant Source Modification No.:	089-12187-00180
Permit Reviewer:	M.E. Sims

Koppers Industries seeks the flexibility to either clarify the tar at the new tar centrifuge plant or inject the tar at the blast furnaces as had previously been done (the blast furnace tar injection operation has not been previously permitted). Emissions for this modification are based solely on the tar centrifuge plant (tar storage tank, diluent feed tank and solids conveyor and roll-off boxes) and the natural gas fired flare used to control the VOC emissions. Koppers submitted revised emissions estimates following the EPA Region 5 NESHAP determination. The OAQ has reviewed these estimates and this document is a summary of those calculations.

The following table is a summary of the potential to emit for the modification based on 8760 hours per year.

Project Emissions (tons/year)									
	PM	**PM_{10}**	**SOx**	**NOx**	**CO**	**VOC**	**Pb**	**HAP**	**HAPS**
uncontrolled	0.096	0.096	0.0074	1.27	1.069	22.66	0.0004	12.88	20.16
controlled	0.096	0.096	0.0074	1.27	1.069	6.56	0.004	2.65	3.94

Largest HAP = naphthalene

Basis for Emission Estimates

Emissions from the new tar centrifuge plant will come primarily from the clarified tar transfer tank, the solids conveyor and solids roll-off boxes and the diluent feed tank. Emissions will be in the form of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). Approximately 85% of the crude tar processed by the centrifuge will be converted into clarified tar and 15% will be product tar solids. Of the two diluents used in the process (carbon black oil and naphthalene still residue) carbon black oil represents the worst case emission scenario. For every 100 pounds of tar going into the centrifuge there will be 20 pounds of diluent (carbon black oil). The solids will only come off the tar therefore, for every 120 pounds of tar/diluent mixture, there will be 15 pounds of solids. 60% of the solids will be organic or 9 pounds of organics from the 15 pounds of solids. So, from the 120 pounds of tar/diluent going into the centrifuge minus 15 pounds of solids, there will be 105 pounds of organics going into the tar transfer tank.

We have the 105 pounds of organics going into the clarified tar transfer tank and 9 pounds of organics in the solids going to the conveyer and roll-off boxes for a total of 114 pounds of organics. Therefore, in the 120 pounds of tar/diluent mixture there are 114 pounds of organics and 6 pounds of nonorganic solids.

The percent of organics for the two streams leaving the centrifuge can be determined as follows;

a) For the solids conveyor/roll-off boxes we have 9/114 or 7.89%
b) For the clarified tar transfer tank we have 105/114 or 92.11 %

Using the ChemCAD mathematical simulation model, emissions exiting the centrifuge have a maximum value of 47.35 pounds per hour. Based on 8760 hours, the emissions for the two streams leaving the centrifuge will be 207.39 tons per year. Using the percentages determined above, the maximum VOC emissions contained in each stream can be calculated as follows;

a) For the solids conveyor/roll-off boxes : 207.39 x 0.0789 = 16.36 tons per year
b) For the clarified tar transfer tank : 207.39 x 0.9211 = 191.03 tons per year.

These same percentages were used to determine the VHAP emissions being emitted by the various processes.

Koppers is using a flare incinerator to control VOC and VHAP emissions. The following is a description of the flare incinerator:

Flare Incinerator (ID# H-001)
Description: 1800 degree, 15 foot combustion chamber, 1-5 second residence time, 20 foot stack, 3.0 MMBtu/hr natural gas fired high efficiency, temperature controlled flare incinerator (ID# H-001) for incineration of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs).
Destruction efficiency: 99.5% (naphthalene), assume 98% for all organics

Although the flare incinerator is the control equipment for the solids conveyor, chutes from the conveyor to solids roll-off boxes, and the clarified tar transfer tank it also generates emissions due to the combustion of natural gas. The emissions from the flare incinerator must be included in the emission estimate for the modification.

Pages 3 and 4 show the uncontrolled and controlled potential to emit for the tar centrifuge plant based on 8760 hours. A 98% control efficiency was assumed for the flare incinerator. The clarified tar transfer tank is subject to the Benzene NESHAP 40 CFR 61 Subpart L. Therefore, the basis for determining emissions for the tank are the emissions controlled by the efficiency required in paragraph 61.139 of the NESHAP. The flare incinerator satisfies the requirements of the NESHAP as an alternative to a gas-blanketing system.

Uncontrolled Emissions

Uncontrolled Emissions From The Tar Centrifuge Plant									
	conveyor/roll-off boxes		clarified tar transfer tank***		diluent feed tank		flare incinerator		Totals
	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	tons/yr
PM	-	-	-	-	-	-	0.022	0.096	0.096
PM_{10}	-	-	-	-	-	-	0.022	0.096	0.096
SOx	-	-	-	-	-	-	0.0017	0.0074	0.0074
NOx	-	-	-	-	-	-	0.29	1.27	1.27
CO	-	-	-	-	-	-	0.244	1.069	1.069
VOC	3.74	16.36	0.87	3.82	0.001	0.0044	0.016	0.070	22.66*
Pb	-	-	-	-	-	-	0.0001	0.0004	0.0004
benzene	0.256	1.12	0.06	0.26	0.0001	0.0004	0.0001	0.0004	1.38
p-cresol	0.018	0.079	0.004	0.019	0.0001	0.0004	-	-	0.098
m-cresol	0.019	0.082	0.004	0.019	0.0001	0.0004	-	-	0.101
dibenzofuran	0.086	0.376	0.02	0.088	0.0001	0.0004	-	-	0.464
ethylbenzene	0.024	0.106	0.006	0.025	0.0001	0.0004	-	-	0.131
naphthalene**	2.38	10.44	0.56	2.44	0.0004	0.0018	0.0001	0.0004	12.88
phenol	0.007	0.029	0.001	0.007	0.0001	0.0004	-	-	0.036
POM	0.897	3.93	0.21	0.918	0.0003	0.0013	0.0001	0.0004	4.85
quinoline	0.023	0.103	0.005	0.024	0.0001	0.0004	-	-	0.127
styrene	0.005	0.021	0.001	0.005	0.0001	0.0004	-	-	0.026
toluene	0.033	0.144	0.007	0.034	0.0001	0.0004	-	-	0.178
m-xylene	0.007	0.032	0.001	0.007	0.0001	0.0004	-	-	0.038
p-xylene	0.007	0.032	0.001	0.007	0.0001	0.0004	-	-	0.039
o-xylene	0.011	0.05	0.003	0.012	0.0001	0.0004	-	-	0.062
Totals (HAPs)		16.55		3.60		0.0079		0.0012	20.16

* includes fugitive VOC emissions at 0.55 lbs/hr equal to 2.41 tons per year

**Largest Single HAP

***The clarified tar transfer tank is subject to the NESHAP 40 CFR Subpart L, therefore emissions were determined after the controls

Controlled Emissions

Controlled Emissions From The Tar Centrifuge Plant									
	conveyor/roll-off boxes		clarified tar transfer tank		diluent feed tank		flare incinerator		Totals
	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	tons/yr
PM	-	-	-	-	-	-	0.022	0.096	0.096
PM_{10}	-	-	-	-	-	-	0.022	0.096	0.096
SOx	-	-	-	-	-	-	0.0017	0.0074	0.0074
NOx	-	-	-	-	-	-	0.29	1.27	1.27
CO	-	-	-	-	-	-	0.244	1.069	1.069
VOC	0.075	0.327	0.87	3.82	0.001	0.0044	0.016	0.070	6.56*
Pb	-	-	-	-	-	-	0.0001	0.0004	0.0004
benzene	0.005	0.022	0.06	0.26	0.0001	0.0004	0.0001	0.0004	0.283
p-cresol	0.0004	0.002	0.004	0.019	0.0001	0.0004	-	-	0.021
m-cresol	0.0004	0.002	0.004	0.019	0.0001	0.0004	-	-	0.021
dibenzofuran	0.0017	0.008	0.02	0.088	0.0001	0.0004	-	-	0.096
ethylbenzene	0.0005	0.002	0.006	0.025	0.0001	0.0004	-	-	0.027
naphthalene**	0.048	0.209	0.56	2.44	0.0004	0.0018	0.0001	0.0004	2.65
phenol	0.0001	0.0006	0.001	0.007	0.0001	0.0004	-	-	0.008
POM	0.018	0.078	0.21	0.918	0.0003	0.0013	0.0001	0.0004	0.997
quinoline	0.0005	0.002	0.005	0.024	0.0001	0.0004	-	-	0.026
styrene	0.00009	0.0004	0.001	0.005	0.0001	0.0004	-	-	0.006
toluene	0.0007	0.003	0.007	0.034	0.0001	0.0004	-	-	0.037
m-xylene	0.0001	0.0006	0.001	0.007	0.0001	0.0004	-	-	0.008
p-xylene	0.0001	0.0006	0.001	0.007	0.0001	0.0004	-	-	0.008
o-xylene	0.0002	0.001	0.003	0.012	0.0001	0.0004	-	-	0.013
Totals (HAPs)		0.331		3.60		0.0079		0.0012	3.94

* includes fugitive emissions at 0.55 lbs/hr equivalent to 2.41 tons per year

** Largest Single HAP